



Partner Reported Opportunities (PROs)
For Reducing Methane Emissions

Compressors/Engines ☒
Dehydrators ☐
Pipelines ☐
Pneumatics/Controls ☐
Tanks ☐
Valves ☐
Wells ☐
Other ☐

Reduce the Frequency of Engine Starts with Gas

Applicable sector(s):

☒ Production ☒ Processing ☒ Transmission and Distribution

Partners reporting this PRO: PECO Energy Company

Other related PROs: Install Electric Starters, Install Electric Compressors, Automate System Operations to Reduce Venting, Convert Engine Starting to Nitrogen

Technology/Practice Overview

Description

Internal combustion engine driven turbine compressors are often started by directing unignited pipeline gas through the turbine compressor, rolling the turbine engine prior to ignition. The unignited gas, or start-up natural gas, is vented to the atmosphere. Operating and maintenance schedules dictate how frequently such turbine engines are restarted.

One partner reports modifying maintenance practices and operational scheduling of an LNG refrigeration compressor to reduce engine start-ups. The principles of improved equipment reliability and operational scheduling may apply to other compressors in multi-unit stations.

Principal Benefits

Reducing methane emissions was:

☒ A primary justification for the project ☐ An associated benefit of the project

Operating Requirements

Compressors must have flexible operating and routine maintenance schedules.

Applicability

This practice may be employed in operations that have multiple, parallel compressors.

Methane Savings

132 Mcf/yr

Costs

Capital Costs (including installation)

None

Operating and Maintenance Costs (Annual)

☒ < \$100 ☐ \$100-\$1,000 ☐ > \$1,000

Payback (Years)

☒ 0-1 ☐ 1-3 ☐ 3-10 ☐ > 10

Methane Emission Reductions

The partner reported reducing a refrigeration compressor restart frequency from 9.4 to one start per year, saving 132 Mcf per each avoided restart, or 1.1 MMcf/year.

Economic Analysis

Basis for Costs and Savings

Methane emission reductions of 132 Mcf/yr apply to one turbine engine start-up by rolling with unignited pipeline gas as reported by a partner.

Discussion

This practice can payback quickly. There are potential hidden costs associated with prolonging compressor run times between scheduled preventive maintenance activities, and direct O&M costs associated with improving the maintenance and reliability of engines. In the case of a single engine-driven compressor, generator or pump at a site, longer run times may lead to production losses from unscheduled shut-downs.